



STS-36 photos

On-orbit photography from the STS-36 mission is released. Photos on Page 3.



Rosey visit

The folks who send roses to Mission Control each mission pay a visit to JSC. Photo on Page 4.

Space News Roundup

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April 6, 1990

No. 14

Launch schedule holding despite power outage

Discovery, Hubble await decision to stop battery charging

By Kyle Herring

Shuttle managers are scheduled to meet tomorrow morning to make a final decision on whether to disconnect the battery charge from the Hubble Space Telescope in preparation for Tuesday's 7:47 a.m. CDT liftoff from Kennedy Space Center.

If orbiter and payload processing continues on schedule, the battery charge will be disconnected leading into tomorrow's start of the launch countdown at 2 p.m.

The primary payload on STS-31 is the long-awaited Hubble Space Telescope (HST). *Discovery*, flying its 10th mission, will carry the telescope into its 330 nautical mile orbit.

Despite a power failure at the launch site earlier this week, workers were able to keep the schedule flowing so that all pre-countdown work could be finished in time for tomorrow's start of the countdown clock and afternoon arrival of the flight crew.

Managers will meet Sunday and Monday in the traditional launch minus two- and one-day meetings to

STS-31 Hubble Space Telescope

determine final vehicle readiness. All aspects of processing, including expected weather conditions, are

reviewed before a "go" is given for loading liquid hydrogen and oxygen into the external tank.

Earlier this week, a broken water line damaged a circuit box causing a power outage in several buildings at the launch site, including the launch pads. Battery charging of the HST was interrupted briefly, but had little impact on the processing flow leading to launch.

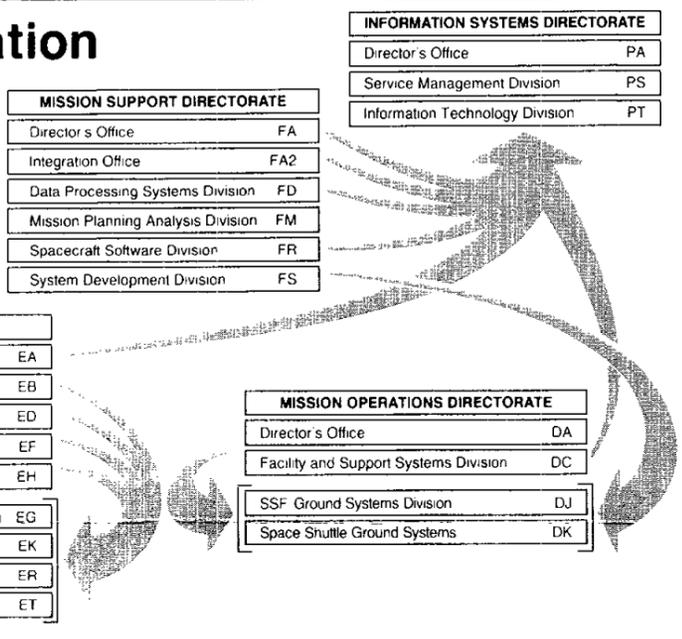
Functional tests between the HST and the Space Telescope Operations

Control Center (STOCC) at Goddard Space Flight Center in Greenbelt, Md., were to have been completed yesterday.

Once the decision to proceed with the countdown is made, crew members will leave from Ellington Field aboard T-38 training aircraft for KSC. Commander for the STS-31 mission is Loren Shriver. Charlie Bolden will serve as pilot. Mission specialists for the flight are Steven Hawley, Bruce McCandless and Kathy Sullivan.

JSC Reorganization

This diagram depicts the major transfers of people and organizations in the JSC reorganization. Many smaller moves associated with the reorganization, particularly those involving small numbers of employees, are not depicted.



Closer groupings focus Engineering

By James Hartsfield

JSC's experts in flight systems, robotics, computers and avionics, among other areas, have been pulled together under the Engineering Directorate's new structure, and the closer groupings should help the center as it focuses on today's and tomorrow's programs.

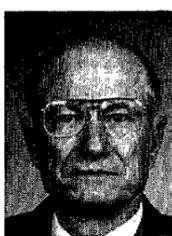
"We've tried to get the facilities, the tools and the people who are doing like kinds of work together in one place," Engineering Director Henry Pohl said.

The move concentrates the talents in given areas, talents that previously had been spread out in more than one division, or even more than one directorate. By concentrating them, engineers in similar disciplines will be able to share expertise by walking

across the hall rather than across the center.

For example, robotics projects that had previously been in the Mission Support Directorate (MSD) and in Engineering's Crew and Thermal Systems Division, Systems Development and Simulation Division and Structures and Mechanics Division are now together in the newly created Automation and Robotics Division. Management of the shuttle's remote manipulator system also has been placed in the robotics division.

In another example, development of the shuttle's flight software, the shuttle's on-board flight computers, and the test facilities for checking and software have all been combined



— Engineering Director Henry Pohl

"I think the credit needs to go to the people in the organizations for being extremely cooperative."

Total life-cycle control boon to Mission Operations

By Kelly Humphries

JSC's reorganization will give the Mission Operations Directorate (MOD) total life-cycle responsibility for the ground systems that it needs to support the space shuttle and space station, according to MOD Deputy Director John O'Neill.

"It really tightens the organizational interfaces," O'Neill said. "We are even more accountable for doing a good requirements job and following through on the implementation."

In the new organizational arrangement, MOD has total responsibility for requirements definition, integration and development of all mission-related ground systems, as well as control over sustaining engineering, maintenance and operation of those systems. The changes streamline the NASA and contractor process for developing user-effective systems.

"We have gone a step further internal to MOD and organized by programs," he added. "Now we have a division that will handle the total life-cycle of space shuttle ground systems upgrades and support. We also have in space station a similar kind of set-up."

That change involves the combination of elements from MOD's old Facility and Support Systems Division (Code DC) and the Mission Support Directorate's (MSD) Systems Development Division (Code FS) into two ground systems divisions. Several key people from MSD's old Mission Planning Analysis Division also were transferred to MOD.

Jack Seyl will head the new Space Station *Freedom* Ground Systems Division (Code DJ), and Kenneth Russell will head the new Space Shuttle

"I think they were absolutely necessary changes to provide us a more efficient approach to concentrate on our responsibilities."

—MOD Deputy Director John O'Neill



—ISD Director Ron Berry

"It's critical for the center to have a strong, fundamentally sound, well planned and integrated information systems platform."

New directorate to plan JSC information systems

By Kelly Humphries

JSC now has a directorate that is responsible for integrating and maintaining the health of the center's linking information systems.

The new Information Systems Directorate (ISD), which is being built around a nucleus of people and organizations from the old Mission Support Directorate (MSD), is expected to bring planning and coordination where there has been little. ISD also is drawing people from the management information systems areas in both the Engineering and Mission Operations Directorates.

Working in conjunction with the Information Resources Management (IRM) Council, the ISD will form the backbone of JSC's long-range strategy for networking and information systems.

Ron Berry, director of the new

organization that takes a centerwide approach," Cohen explained.

Adjustments are likely to continue in the next several months, he said.

"I expect many additional refinements down to the section level as

improvement and cost savings by creating an organization dedicated to developing and coordinating all of JSC's institutional information and communications services. "JSC's separate organizations have grown by leaps and bounds in information technology, but coordination has been lacking. To make the most cost-effective use of these systems, we need an

organization that takes a centerwide approach," Cohen explained.

Adjustments are likely to continue in the next several months, he said.

"I expect many additional refinements down to the section level as

The lines for JSC's new organizational chart have been drawn, but Director Aaron Cohen says he expects additional refinements as the details filter down to the lower organizational levels.

Cohen first announced his intent to reorganize the Mission Support (MSD), Mission Operations (MOD) and Engineering Directorates (ENG) in early February. A team made up of representatives from each of those organizations and the Human Resources Office worked out the details and Cohen approved the plan March 30.

"My main aim in making these changes is to resolve two unnatural splits that have been impeding the effectiveness of our center," Cohen said. "First, we needed to put the responsibilities for flight hardware and software in the same hands. Second, we needed to

put the job of developing mission support systems and ground facilities in the hands of the users."

A third objective was to set the stage for long-term productivity

"First, we needed to put the responsibilities for flight hardware and software in the same hands. Second, we needed to put the job of developing mission support systems and ground facilities in the hands of the users."

—JSC Director Aaron Cohen



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Please see ENGINEERING, Page 4

Please see MOD, Page 4

Please see ISD, Page 4

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m. to 2 p.m. weekdays.

- General Cinema (valid for one year): \$3.75 each.
- AMC Theater (valid until May 1991): \$3.50 each.
- Sea World (San Antonio, year long): adults, \$17.25; children (3-11) \$14.75.
- Astroworld (valid 1990 season): season, \$39.95; regular, \$15.97; children, \$9.21.
- NASA Night at Astroworld (April 6, 6 p.m.—midnight; park is closed to the public): \$9.20 each.
- JSC EAA Picnic tickets (May 5, Rec Center): adults, \$4; children, \$2.

JSC

Gilruth Center News

Sign up policy—All classes and athletic activities are first come, first served. To enroll, you must sign up in person at the Gilruth Recreation Center and show a badge or EAA membership card. Payment must be made in full at the time of registration. Classes tend to fill up four weeks in advance. For more information, call x35789 or x30304.

EAA badges—Dependents and spouses may apply for a photo I.D. 6:30 p.m.-9:30 p.m. Monday-Friday.

Defensive driving—Course is offered from 8 a.m.-5 p.m. May 19; cost is \$15.

Weight safety—Required course for those wishing to use the Rec Center weight room. The next classes will be from 8-9:30 April 18.

Ballroom dance—Beginning, intermediate and advanced ballroom dancing. Classes begin May 3 and meet every Thursday for eight weeks. Beginning and advanced classes meet 7-8:15 p.m. Intermediate class meets 8:15-9:30 p.m. Cost is \$60 per couple.

Low-impact aerobics and exercise—Each eight-week session runs twice a week from 5:15-6:15 p.m. Cost is \$24.

Tennis—Beginning tennis lessons, meets Mondays from 5:15-6:45 p.m. for six weeks, beginning April 16. Cost is \$32.

Almost Anything Goes—Six teams of three men, three women are needed for JSC Picnic. Registration deadline is May 2. Cost is \$10 per team, includes T-shirt.

Spring Intercenter Run—The 10 kilometer and/or 2-mile races for the annual intercenter run will be held throughout April. Runners may submit their times at the Rec Center.

Listen!

Need the latest information on what's happening at JSC?

The JSC Employee Information Service may have just what you're looking for.

Updated every day at 11:30 a.m., the recorded announcement can be reached by calling:

483-6765

JSC

Swap Shop

Property

Sale: 60 ac., 3 mi. from Karnes City, TX, on Hwy. 80; 2-story house, 1.5 lots, near El Campo, trees. 783-9164.
Lease: 10 acres 1/2 mi. W. of Hwy. 146, 40x60 barn, ponds, util., \$200/mo. nego. Trey, 280-4381 or 484-7834.

Rent: Egret Bay condo, 2-2-2CP, no pets, no smokers, \$550/mo. Irene, x39043 or 480-9812.

Rent: Lake Travis cabin, priv. dock, CA/H, accomm. 8, \$325/\$425 w/ky., \$75/\$85 daily. 326-5652.

Rent: Lake Livingston waterfront house, 3-2, CA/H, furn., ex. cond., wk. or wknd. rates. 482-1582.

Sale: 24'x60' mobile home lot, 3-2, wkshp., stor., all appls., \$39,500, \$4,000 down. 332-3382 or 554-6624.
Lease: Friendswood/Heritage Pk., 3-2-2, over 1,600 sq. ft., \$725/mo., no pets. 483-7468 or 996-0990.

Sale: 2 lots in La Porte, 75'x220', \$5,000/ea.; 2 lake lots on Toledo Bend Lake, water, elec. septic tank, \$10,000. 944-5624.

Sale/Lease: Baywind I condo, 2-1.5-2, W/D, \$375/mo., \$200 dep., \$27,200. Elaine, 333-3992.

Sale: Lg. lots, waterfront subdiv. near NASA, mid \$30's. Don, x38039 or 333-3313.

Sale: Bay house on Caranchua Bay near Palacios, furn., access to boat ramp, pier, \$40,000. (409) 543-2052.

Sale: 90 plus acres in Flatonia/Schulenburg, oaks, 3-2-3 home, 2 ponds, 1 natural spring, rustic foreman's house w/barns, corral, \$225,000. Rick, 996-8961 or 283-1988.

Rent: Galv. condo, furn., sleeps 6, daily or w/ky. x33479 or 486-0788.

Lease: 1-1, FPL, W/D, upstairs unit, new carpet, \$350. 681-4732.

Lease: Friendswood/Heritage Park, 3-2-2, 1,600 sq. ft., no pets or smokers, \$750/mo. 483-7137 or 280-9441.

Lease: Townhouse, 2-2.5, El Dorado Trace, Lou, 480-2392.

Sale: Meadowgreen, 3-2-2, app. 1,450 sq. ft., \$75K. Francis, 892-6983 or 486-5207.

Sale: 3 BR house surrounded by bay, \$42K. Bonnie, 483-7933.

Sale: League City 14x80 mobile home on priv. lot, 50x150, some fin. on home, \$23,000; Kemah lot, 111' x 180', \$7,200. 334-1883.

Lease: Heritage Park, 3-2-2, formal dining, lg. kitchen, brkfst. area, miniblinds, fan, FPL, fenced, \$695/mo. 482-6609.

Rent: Townhouse, 2-2.5, 486-7957 or 480-2392.

Rent: League City, Pecan Forest, 3-2-2, FPL, priv. crtyd., \$725/mo. 554-6200.

Sale/Rent: Galv. timeshare condo, furn., 2-2, sleeps 6, \$10,500 or \$500/wk. Steve, 282-6930.

Sale: Friendswood 3-2-2, 1,500 sq. ft., brick, \$68,000. 482-6651.

Lease: Webster/Ellington, 2-1 apt., W/D avail., \$425/mo. Dave, x38156 or 486-5181 or Eric, x38420.

eng. or seat. 480-1176.
'81 Olds Cutlass Cruiser, ex. cond., new trans., \$1,795. David, 282-3827 or 554-5514.

'68 Mercedes 250S 4 dr. sedan, \$4,000. Bauch, 333-3382.

'65 Olds Starfire sport coupe, 106K mi., orig. owner, \$2,600, OBO. Tom, x38298 or 488-4089.

'73 Mercury Comet, 302 V8, auto., good cond., needs restoring, \$495. Chuck, 487-2978.

'79 Olds 88, 4 dr., loaded, 20K mi., needs paint, \$1,450. Chuck, 487-2978.

'77 Suburban, new motor, trans., batt., brake lines. Pat, 332-1262.

'85 Jaguar Sovereign L2L, 12,500 mi. 664-2581.

'87 Volvo 245 GLA, wagon, ex. cond., loaded, 52K mi., \$13,900. Scott, 283-5611 or Darwin, x32142.

'87 24' travel trlr., sleeps 6, air cond., ex., \$7,500. 488-3368.

'86 Honda Accord LX, 4 dr., 5 spd., 47K mi., ex. cond., \$7,750. Gary, x32844 or 333-1518.

'79 Toyota Corolla SR5 sport coupe, new paint, tires, 5 spd., 15K on reb. eng., AM/FM cass., ex. cond., \$2,000 or trade for late model PU. x36160 or 482-6160.

'85 Toyota MR2, loaded, 5-spd., ex. cond., 54K mi., \$6,500, OBO. Cindy, 779-4515 or Darwin, x32142.

Dodge van, Mark III, 318 V8, 59,800 mi., 4 Capt. chairs, couch/bed, TV hookup, ex. cond., \$10,950. 337-2107.

'72 Pont. Bonneville, 4 dr. HT, good cond., \$950. Jim, 280-1653 or 474-4177.

'79 Olds Cutlass, 260 V8, new trans., auto., ex. cond., \$950, OBO. 534-3240.

'88 GMC Safari van, 22K mi., dual AC, all pwr., \$12,000. x37069 or 534-3727.

Cacillac Deville, sedan, ex. cond., low mi., \$5,480. Mike, 333-2335.

Cycles
Women's 12 spd. bike, Sears, new. 538-1102.

'82 Yamaha Maxim 750, 14K mi., ex. cond., \$1,500. 480-1176.

Men's bike, 23-24" for triathlon use. 471-2490.

'78 Kawasaki KZ650, less than 7K mi., w/helmet, \$650. Steve, x35806 or 333-4222.

'81 Suzuki 850cc, vetter fairing/windscreen, very low mi., ex. cond., snow suit, helmets, \$1,400. Patrick, x32635 or 488-1079.

'84 Honda V65 Magna, 1100cc, 27K mi. w/windshield, ex. cond., \$1,600. Ray, 282-2524.

'81 Honda Goldwing, GL 1100, \$995. Rich, 332-7399.

'83 Suzuki GN125cc, low mi. 474-7006.

'85 Honda Elite scooter w/helmet, \$500; '85 Honda Nighthawk, \$1,000, OBO. Amy or Patrick, 488-1988 or 488-8643.

'82 Suzuki, GS 550 Katana, good cond., 11K mi., \$800, OBO. 333-7076 or 480-2549.

Boats & Planes
19' Tri Hull Sportsraft, 27' tandem axle trlr. 538-1102.

Aircraft propeller, Sensenich 74DM 6-0-58, yellow tagged, fits some Beech, Piper PA-18, PA-22, PA-28 series aircraft, \$900. 538-2299.

Sunfish sailboat and trlr., good cond., \$900. 483-8278 or 326-2995.

'83 25' Catalina, 7.5hp Johnson, 6 sails, VHF, AM/FM cass., EZ loader dbl. tandem trlr., \$13,500, OBO; '83 EZ loader trlr., galv., dbl. tandem, accom. 25' sailboat, was \$3,000, now \$1,500, OBO. Mike, 474-5414.

Today

Cafeteria menu—Special: Salisbury steak. Entrees: baked scrod, broiled chicken with peach half. Soup: seafood gumbo. Vegetables: cauliflower au gratin, mixed vegetables, buttered cabbage, whipped potatoes.

Saturday

PSI Seminar—The NASA/Clear Lake area chapter of Professional Secretaries International (PSI) is hosting a seminar entitled "The Office Team of the Nineties" by Peggy Morrow, from 9 a.m.-1 p.m., April 7, at the San Jacinto South Campus Student Center. Topics include surviving office stress, acquiring skills, avoiding procrastination, and resolving work conflicts. The cost is \$25 for non-PSI members, \$20 for members, and \$15 for students. Contact Cindy Thomasen, x30228, for information.

Monday

Computer graphics — The Houston-area Association for Computing Machinery/Special Interest Group in Computer Graphics (ACM/SIGGRAPH) will hold its first public meeting at 5 p.m. April 9, at McDonnell Douglas Space Systems Co. Call Frank Taylor at 283-4278 for more information.

Health Related Fitness Program—The first of three JSC health related fitness programs to be held in 1990 will be from 11 a.m.-4 p.m., Monday, Wednesday and Friday for 10 weeks April 9-June 29. The second course will be at 6:30 a.m., Monday, Wednesday and Friday, July 7-Sept. 21. The third will be offered at 11 a.m. and 4 p.m., Monday, Wednesday and Friday, Sept. 24-Dec. 14. Call x30301 or x30302 for information.

Cafeteria menu—Special: beef and macaroni. Entrees: ham steak, Parmesan steak. Soup: chicken and rice. Vegetables: green beans, carrots, au gratin potatoes.

Tuesday

NCMS meeting—The Texas Gulf

coast Chapter of the National Classification Management Society (NCMS) will hold its dinner meeting at 5:30 p.m. April 10 at the Ramada Kings Inn. Joseph Degregorio, director of industrial security, Defense Investigative Service, southwestern region, will speak. Contact Peggy Garcia, x34039, or George Guillory, 283-6618, for information.

Cafeteria menu—Special: Mexican dinner. Entrees: potato baked chicken, barbecue spare ribs. Soup: tomato. Vegetables: squash, ranch beans, Spanish rice, broccoli.

Wednesday

JSC Astronomy seminar—A discussion of "Chaos in the Solar System" by Dr. A.A. Jackson will be held from noon-1 p.m. in the Bldg. 31 conference room; contact Jackson at x33709 for information.

Cafeteria menu—Special: baked meatloaf with Creole sauce. Entrees: baked scrod, liver and onions, ham steak. Soup: seafood gumbo. Vegetables: beets, Brussels sprouts, green beans, whipped potatoes.

Thursday

Cafeteria menu—Special: smothered steak with dressing. Entrees: chicken and dumplings, corned beef with cabbage. Soup: beef and barley. Vegetables: spinach, cabbage, cauliflower au gratin, parsley potatoes.

April 13

Astronomical Society meeting—Dr. Steve Williams will speak on "Science vs. Psuedo-Science" at 7:30 p.m. April 13 at the Lunar and Planetary Institute. For more information call Bill Williams at x53826.

Cafeteria menu—Special: tuna and salmon croquette. Entrees: pork chop with yam rosette, Creole baked cod. Soup: seafood gumbo. Vegetables: Brussels sprouts, green beans, buttered corn, whipped potatoes.

April 16

Orbital debris conference—NASA, the American Institute of

Aeronautics and Astronautics and the Department of Defense will sponsor an Orbital Debris Conference, "Technical Issues and Future Directions," April 16-19 in Baltimore, Md. The conference will review accomplishments to date, work in progress and plans for the next five years for all of the sponsors as well as the European Space Agency and Japan's NASDA and ISAS.

April 18

Houston Space Business Roundtable—The monthly business program will feature Emyre Robinson, president of Barrios Technology and chairman of the Texas Space Commission, speaking on the Texas Space Commission. Registration begins at 11:30 a.m., April 18, at the Nassau Bay Hilton. Tickets are \$18 for members, \$20 for non-members, and reservations are required. Call 486-5068 for information.

JSC Astronomy Seminar—Tim Wegner will present "Fractals: A Demonstration" from noon to 1 p.m., April 18, in the Bldg. 31 conference room; contact Al Jackson at x33709 for information.

April 19

NPMA meeting — The JSC National Property Management Association (NPMA) monthly dinner meeting will begin with a social hour at 5:30 p.m., April 19, at the Gilruth Recreation Center. Lupita Armendariz, Equal Opportunity Office, will speak. Contact Sandra Pierce at 282-4151 for information.

April 20

NCMS special meeting—The Texas Gulfcoast Chapter of the National Classification Management Society (NCMS) will hold a luncheon meeting at 11:30 a.m., April 20, at the Ramada Kings Inn. Steven Garfinkel, director, Information Security Oversight Office, will speak. Contact Peggy Garcia, x24039, or George Guillory, 283-6618, by April 16, for reservations.

Musical Instruments

Upright piano, ex. cond., \$500. Jim, 661-5777.
Antique 1863 Chickering Square grand piano, rosewood case mint cond., nego. 473-1037.
Upright piano, ex. cond. 480-7257.
Fender Strat. w/hard case, Peavy class. 50W, ex. cond., \$725/both. x31495 or 332-3536.

Photographic

Nikon AF 50mm f1.8 Nikkor auto. focus lens, \$40.
Minolta 50mm f1.7 MD lens, \$35, new. 464-8694.
Keystone XR308 telephoto everflash 110 cam., \$15. Samouce, x35053.
Canon 35mm cam. w/AEC, good cond., \$75. 283-5496 or 332-1614.

Pets & Livestock

Kennel Cab II pet carrier, 15x15x24, \$20. Samouce, x35053.
Baby cockatiels, 7 wks. old. Linda, 484-7834.
Free to good home, long haired tabby, spayed, declawed, extremely sweet natured, needs to belong to one cat fam. Mandy, 480-8190 or 480-2265.
Easter bunnies, 10-17, incl. feed, instr. 554-6200.
Zebra finches, guinea pigs, pied doves, \$10/ea. Jim, 282-3750 or 482-6744.
Siamese kittens, seal, blue and flame points, 6 wks. old April 18, \$75. Chris, 483-5172 or 997-1151.
Free puppies, 6 M, 1 F, mixed, 2 mos. old. Elaine, x30118 or 334-1067.

Wanted

Want foul weather gear, compl. outfit in men's lg. Cathy, x33851 or 484-1324.
Want transferable Charter Gold membership to Pres./1st Lady club. 486-9605.
Want fem. (non-smoking) roommate to share 2-2 Chatham Vill. apt., \$287/mo. plus 1/2 util. W/D, leased thru Oct. Alison, x34314 or 332-0298.
Want 10, 20 or 30 meg. hard drive for IBM-XT comp. Roger, x31909 or (409) 925-02621.
Want non-smoking fem. roommate to share 3-2-2 house in Meadow Green, \$300/mo. plus 1/2 util. Linda, x36881 or 486-5246.
Want DT2814 Analog input board for IBM PC for \$200; DT 757 screw term. panel for DT 2814 analog input board for \$50; LC-510 Epson 21 pin Dot Matrix printer for \$225. x37267.
Want bkfst. table, solid wood, round, ped. base w/ ext. leaves; teak dresser, good cond., dbl. or triple width, low hgt. Linda, x32701.
Want roommate to share Univ. Green townhouse, non-smoker, \$300/mo., bills pd. Dawn, 280-0642 or 333-6329.

Miscellaneous

Antiques: wheel chair, quilts, tops, iron bed, sewing mach., walking plow. 783-9164.
Tour Model II irons, \$150, 1-9, PW & SW; Tour Model III irons, \$18,200/ea., metal woods, \$300/ea.
Amber Sharon, Cabbage Rose, dep. glass, ex. cond., 42 pcs., \$950 or by pc. Alison, x34314 or 332-0298.
Epson wide carr. printer, MX-100-III, \$150; teletype, \$25; Sealey queen sz. box springs, matt., \$75; ARP elec. piano, \$500. 486-9605.
Hyundai ground effects, \$800, rear wing spkr., \$100; sunroof def. \$40. 488-8198.
Alum camper shell for full sz. PU, ex. cond., \$450, OBO. Ed, 484-0959.

Barbers chair, frame only, poor cond. Free. Larry, x33946 or 996-0158.
Infant clothes, girls dresses, infant to 12 yrs., boys infant to 7 yrs., ex. cond. 488-6521.
New Emerson VHS VCR, \$150, OBO. Kim, 488-8198.
10' Sportsman shrimp net compl., \$100. Ron, 482-1385.
Home wtr. filter, 5,000 gal., warr., new, \$80. Kathleen, 333-7075 or 480-1024.

3-pc. sect. corner sofa, \$175; oak coffee table, \$45; canopy bed/dresser/mirror, no matt., \$210; queen sz. matt., box spring, \$250; Barbie doll house, \$25; card table, \$20; student desk, chair, \$35; port. potty for camping, new, \$18. 486-5527.
Magnavox 25" color TV, rem., \$130; Pioneer stereo 65W rec., cass. deck, both \$140. 282-5429 or 484-5366.

Xerox 3701 copier w/reduc., \$300. x38039.
Alum. camper top for 8' Ford PU. Bill, x39230.
HD generator, Honda, 2200W, 97 lbs., ex. cond., \$450. Lynn, x36306 or (409) 925-6780.
6' unfin. bar, \$100. 486-0297.
Magic Chef dbl. gas oven, \$150; Penn down riggers, \$150/pr.; full sz. arcade games, \$250. 339-1957.
Nintendo Super Teams, use w/pwr. pad, \$20. Dot, x35274.

Set of 4 rims, Amer. Racing, \$325. Rick, 996-8961 or 283-1988.
Morgan hot tub, 5 person, 455 gal., \$2,300. 991-6429.
14K gold diamond Marquis solitaire, 1 ct., \$2,000, OBO; royal blue formal, tea length, sz. 9, ex. cond. BO. Michelle, x31165 or 337-5424.

Singer elec. sewing mach., ex. cond., \$50; gold nug. watch, ex. cond., \$150; Eddie, x34580 or 337-5424.
Prom dresses, burg. silk, sz. 7, \$100; lt. blue, sz. 5, \$75; rose, tea length, sz. 7, \$100; red, sz. 5, \$200; royal blue w/att. petticoat, sz. 7, \$150. Michelle, 333-7615.
8-pc. Tiara dinner glassware, Diane, 488-1274.
Brother EP-20 typewriter, ex. cond. Lea, 333-7306 or 925-1678.

55 gal. aquar. w/access., wooden stand, \$150. x35178 or 944-2391.
Saltwtr. aquar. supplies, 30# seasalt, \$10; 4 tests kit, \$35; 100# crushed coral, \$20; decor. coral, \$3/ea. x35178 or 944-2391.
Kohler ped. sink, new, \$225. Harry, x30263.

Strollee port. crib, w/case, Sunnigly, crib mobile, Kangarooaroo. Rich, x38519 or 488-6592.
5 1/2" Jeep rims, new, \$50. 480-5430.
Graco high chair, \$30; Cosco baby walker, \$25. Youm Nguyen, 483-2142.

Windsurfers, Hyfly 500, \$600; 8'5" asymmetrical short board; 6.5 sq. meter sail, \$675. 588-4412.
Passport radar det., \$200; Kenwood stereo rec., quartz turntable, \$500; 19" RCA color rem. TV, \$100; bed, ladies makeup dresser, night stand, chest, matching credenza w/mirror, chest, \$400; 2 spear guns, \$30; baby stroller, \$15; dog house, \$10. Phil, 282-3600.
Super twin wrtd., \$75; wghts. w/bench, \$75. Amy or Patrick, 488-1988 or 488-8643.

Util. trlr., 4x6x2 box, 14" tires, ex. cond., \$280. Grissom, x39525.

Pink/silv. lame prom dress, sz. 7, \$200. Carol, 480-0223.

Leer camper for full sz. short bed PU, \$300. Steve, 471-6160.

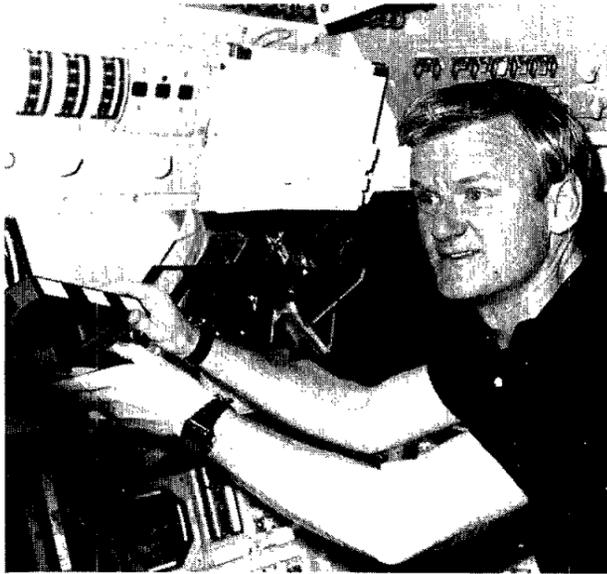
Exer. bike, \$25. 486-4538.

20 gal. aquar., stand, htr., cov. w/ft., \$69. Lea Anne, 480-4101 or 486-6762.

Ski Atlantis

Upside-downhill racer uses makeshift gear to 'claim' speed record

Recently released on-board photography from STS-36 shows how the crew used some of its unclassified time during the dedicated Department of Defense mission. Clockwise from right: 1) Commander J. O. Creighton, an avid skier, becomes the self-proclaimed "world's fastest skier" with this workout on *Atlantis*' middeck. While some may question his right to claim that title based on the 17,500 miles an hour the shuttle flies in Earth orbit, few would take issue with his ingenuity in fashioning makeshift ski gear. 2) Mission Specialist Pierre Thuot uses the Arriflex motion picture camera to record the activities of his fellow crew members. 3) Clouds and their shadows create an eerie double image as the Sun glints off ocean waters in this 35 mm photograph taken by the crew as it circled the Earth at the unusually high inclination of 62 degrees. 4) Pilot John Casper gets ready to use the Shuttle Portable On-board Computer (SPOC) at his pilot's station on *Atlantis*. 5) The *Atlantis* five pose for a crew portrait. From left are Creighton, Mission Specialists Dave Hilmers, Mike Mullane and Pierre Thuot, and Casper. 6) Hilmers prepares to use the large-format AeroLinhof camera for Earth-observations photography.



Reorganization designed to resolve unnatural splits

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part of a process of combination and readjustment," he said. "I hope everyone involved will work with me to make the transition to the new organization as smooth as possible."

The most obvious organizational change is the establishment of the Information Systems Directorate (Code PA) from the parts of the old Mission Support Directorate that dealt with information resources across the center. Other major portions of MSD have been divided between Engineering and Mission Operations in an effort to combine management responsibility for flight hardware and software and

put ground systems development responsibility with the users.

The new Information Systems Directorate (ISD)—made up of the old MSD's Data Processing Systems Division (FD), a branch from the Flight Software Division (FR), the Integration Office (FA) and various computer experts from MOD and ENG—will put together and follow through on a set of consistent centerwide information services.

Engineering Director Henry Pohl is taking advantage of the opportunity to make some additional changes in ENG that complement Cohen's overall plan. In all, six divisions have been

abolished and replaced with four.

The Program Engineering Office (EB), Advanced Programs Office (ED), Systems Development and Simulation Division (EF), Avionics Systems Division (EH), Mission Planning and Analysis Division (FS) and Flight Software Division (FR) are now gone.

In their place are the Navigation, Control and Aeronautics Division (EG), the Flight Data Systems Division (EK), Automation and Robotics Division (ER) and Systems Engineering Division (ET).

Creation of the first two, EG and EK, is specifically aimed at the major reorganization goal of locating flight

hardware and software responsibilities in the same directorate. The birth of (ER) has its roots in Cohen's desire to provide a division-level focus for automation and robotics. And the formation of ET is designed to better focus the center's ability to support multiple major programs concurrently.

Moving the Systems Development Division (FS) from MSD to MOD and combining it with the MOD Facilities and Support Division (DC) will fulfill another of the reorganization's major goals by giving responsibility for development, maintenance and operation of ground facilities and

systems to the users. The old divisions have been abolished and two new divisions, aligned by program, have been created to accept those responsibilities.

The Space Station Freedom Ground Systems Division (DJ) will be responsible for development of new facilities for mission operations and training that will continue through sustaining engineering, maintenance and operations.

The Space Shuttle Ground Systems Division (DK) will be responsible for upgrades, sustaining engineering, maintenance and operations for shuttle facilities.

MCC visiting hours slated

The Mission Control Center (MCC) viewing room will be open to JSC and contractor badged employees and their families during the STS-31 mission from 2 to 5 p.m. on April 12, 13 and 14, based on an April 10 launch.

Employees must wear their badges and escort family members through the regular public entrance on the northeast side of Bldg. 30. Visitors should limit their stay during busy periods.

Viewing dates and times may change with little notice. Employees are encouraged to call the Employee Information Service at x36765 for the latest details.

Open house rescheduled

The JSC Child Care Center's open house has been rescheduled. It will now be held from 9 a.m. to noon on Saturday, April 14, rather than tomorrow. All employees are welcome to attend.



JSC Photo by Bob Walick

HERE AT LAST—The Sheltons — Mark, Terry and daughter MacKenzie — get a chance to see where their roses sit when the space shuttle flies. The Sheltons, who have sent roses to every flight control team since STS-26, visited the Mission Control Center last week. On hand were Flight Director Milt Heflin, left, and EECOM Dave Herbek, right.

ISD to consolidate JSC's institutional information services

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for information services to consolidate, over time, all information services under a single JSC organization.

"There's been a lot of duplication of effort and duplication of systems, but probably as important—if not more important—has been a centerwide degradation in quality of those information systems because of the resulting incompatibilities. They (the systems) can't always talk to each other."

Berry said the new directorate already has identified a two-pronged strategy to address those problems.

"We have a top-down strategy, where ISD will be leading and directly supporting centerwide planning, integration and setting of standards through the IRM Council. That will be done by consensus so that all other directorates get their say in the process, with the final word reserved for the center director.

"The bottom-up strategy is where ISD provides centerwide institutional services, information systems platform services, networks and large-scale institutional technical and management computer systems services, as well as certain generic software and advanced technology development.

"One of the key things we're trying to do is develop a set of standards—a consistent definition of information parameters, or a dictionary—so that everybody here at the center is using the same designation for the same generic kind of information so we can better integrate the information and flow the information across the center."

The IRM Council will develop goals for the center's information resources, and the ISD will work to implement them. Within a year, a much better integrated information systems plan should be in hand. That plan will be based on a thorough understanding of JSC's information resources and will include a first draft of the future information architecture.

Information systems platform services will include development, assessment and transfer of advanced software technology.

ISD also will be working on institutional applications for information systems technology as requirements come in from the center and NASA's Automated Information Management program.

Cafeteria hours for STS-31

Cafeteria hours for Bldg. 3 during the STS-31 mission will be from 6:30 a.m.-4:30 p.m. on launch day (weekday only) and 7 a.m.-4:30 p.m. on weekdays and weekends during the mission.

The cafeteria in Bldg. 11 will be open from 6:30 a.m.-2 p.m. on launch day, if it is a weekday, and on weekdays during the mission. The Bldg. 11 cafeteria will be closed Saturdays and Sundays.

MOD accepts ground support life-cycle control

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Space Shuttle Ground Systems Division (Code DK).

O'Neill said MOD will take advantage of commonality in these two facility divisions, but that the end-to-end responsibility to bring facilities on-line in each program will now be aligned within one division. The move also puts the two organizations in a better position to make tradeoffs between requirements and funding in today's tight budget environment, he added.

Another important aspect is that the Management Integration Office (Code DA5) now will have responsibility for contract management of two major contracts transferred from MSD. In addition to the Space Transportation System Operations Contract (STSOC) and the Operations Support Contract (OSC), the office also will manage the Training Support Contract (TSC) and the Mission Support Contract (MSC). The TSC and the MSC are the development elements of the MOD contractor team.

To show its support for the new Information Systems Directorate (ISD), MOD sent its administrative and management information

systems development people to ISD. "We will draw upon ISD for all of that support in the future."

MOD took advantage of the center reorganization to put in place some other changes that were already in work:

- The Administrative Office (Code DA12) has been established to provide a wide range of personnel and administrative support services;
- The Space Shuttle/Space Station Freedom Assembly and Orbital Maneuvering Vehicle (OMV) Operations Office (Code DH12) has been established to define and develop techniques for integrated space station assembly operations and OMV flight operations;
- The External Interfaces and Processes Section has been split into the External Interface Section (Code DI241) and the Operations Processes Section (Code DI251) to better support space station operations;
- The Flight Design and Dynamics Division (Code DM) has been reorganized to develop a more effective distribution of responsibilities and personnel;
- The Reconfiguration Management Office

has been renamed the Reconfiguration Management Division (Code DP) to more accurately reflect space station responsibilities. The Facilities Reconfiguration Office has been renamed the Space Station Reconfiguration Office (Code DP4);

- The Training Division (Code DG) has been moved and now reports to the MOD assistant director for the Space Shuttle Program; and

- The Space Station Training Branch (DG5) forms the nucleus of the Space Station Training Office (Code DT). The office, which will be led by Frank Hughes, will report to the MOD assistant director for the Space Station Program. It is responsible for establishing flight crew and flight controller training requirements, and for leading the development of all space station training support systems.

From MOD's standpoint, one of the major reasons the reorganization was needed was to stretch the limited number of civil servants available for multiple program operations. Experienced civil servants are needed to work on space station, but the new personnel who must take their places on shuttle need time to come up to speed, O'Neill explained.

Engineering reduces number of divisions, adds employees

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in the new Flight Data Systems Division.

The restructuring has increased the number of workers in engineering and reduced the number of divisions. Ten former engineering and MSD divisions have been combined into the current eight engineering divisions. Engineering gained 127 new workers. "But I believe everyone will still be doing the same type of work they were doing previously," Pohl said.

The reorganization plan didn't come from the top down. "We did this organization a little different. I framed it out and let the division chiefs work out the details," Pohl said. "I thought they would work out maybe 60 percent of it, but they really worked it out about 99 percent themselves.

"I think the credit needs to go to the people in the organizations for being extremely cooperative," he added.

The decision to restructure engineering did not come easily. "I was

reluctant at first, because it creates an unsettled feeling for a while," Pohl explained. "We spent a lot of time discussing this issue before we decided to make the move. Ron Berry (former Mission Support director now Information Systems director) deserves most of the credit for the decision to press on. He did a great job of telling people why this needed to be done."

The new organization probably will require refinements over time, Pohl said. "It's going to take a while before we understand all of the good things and the bad things we did in reorganizing. There will be a down side, but I believe the benefits will greatly outweigh any negative effects."

Changing times require changing structures, he added. "You've got to have an organization where you've got the talent available to work on whatever project that needs it at the moment. This should give us a little flexibility to get into a forward-thinking mode. We spend too much time

reacting; that is, looking at how to fix what broke yesterday. We have tried very hard to put in place the staff we need to do a better job up front, to do better planning."

The next step in the reorganization process will be a long one—moving people to new locations. "We'll probably start moving people very soon, but I suspect we'll still be moving by the end of the year," Pohl said.

The Program Engineering Office, the Advanced Programs Office, the Systems Development and Simulation Division and the Avionics Systems Division were abolished in the Engineering Directorate. And many of the workers assigned to MSD's Mission Planning and Analysis Division were transferred to Engineering. Engineering now includes:

- The Management Support Office, Code EA131, managed by Bob Schwartz, a support office that manages the Lockheed Engineering

Support Contract (LESC), is responsible for engineering standards and processes, and assists the director in planning for institutional programs.

- The Crew and Thermal Systems Division, Code EC111, led by Acting Chief Wil Ellis, a division with the same name but a different internal structure grouping life support, thermal, extravehicular activity, special projects and systems engineering functions into distinct areas.

- The Navigation, Control and Aeronautics Division, Code EG111, led by Acting Chief Ken Cox, a new division with the responsibility for designing, verifying and implementing guidance, navigation and control hardware and software; aerospace engineering; and integration of interactions between aero, guidance, navigation and control systems with other systems.

- The Propulsion and Power Division, Code EP111, led by Chief Chet Vaughan, a division with the same

structure but with the addition of responsibilities for electrical distribution and control systems.

- The Automation and Robotics Division, Code ER111, led by Acting Chief Walt Guy, a new division with separate areas for intelligent systems, teleoperated robots, autonomous robots and robotic systems evaluation and utilization.

- The Flight Data Systems Division, Code EK111, led by Irv Burtzloff, a new division with responsibility for flight data systems hardware and software. The Shuttle Avionics Integration Laboratory (SAIL) is in this division.

- The Systems Engineering Division, Code ET111, led by Acting Chief Claude Graves, a new division with responsibility for shuttle cargo integration, advanced systems design and definition, performance analysis and simulation systems. The Systems Engineering Simulator will be among this division's responsibilities.